

## Remarks

Claims 1-28 are now pending in this application. Applicants have amended claims 1-9 and 11 and added new claims 14-28 to clarify the claimed invention. Applicants respectfully request favorable reconsideration of this application.

The objection to claims 5-8 is no longer relevant since these claims no longer include the language to which the Examiner objected. Accordingly, Applicants respectfully request withdrawal of the objection to claims 5-8.

The Examiner rejects claims 1-13 under 35 U.S.C. § 102(b) as being anticipated by U.S. patent publication 2002/0070428 to Bernhoff et al.

Bernhoff et al. does not disclose the invention recited in claims 1-28 since, among other things, Bernhoff et al. does not disclose a field grading material consisting of a polymeric matrix including a filler comprising a field grading effective amount of particles having at least one dimension smaller than or equal to 100 nm. While Bernhoff et al. may disclose particles, Bernhoff et al. does not disclose the amount or size of particles.

Bernhoff et al. discloses two different embodiments of a field grading material in a semiconductor device. The field grading material may be a gel, composite, varnish, polymer or rubber based material that can be filled with particles. The particles increase the dielectric constant of the material.

Bernhoff et al. does not disclose modifying the field grading material with a polymeric matrix or how to achieve percolation at a lower filler concentration. Paragraph [0038] only discloses adding particles having a size of 1-100 nm to water acting as a field grading material. However, Bernhoff et al. does not disclose that the particles should be added in a field grading effective amount. Bernhoff et al. only discloses the particles in connection to water as field grading material.

In paragraphs [0038]-[0040], Bernhoff et al. discloses another embodiment wherein the field grading material in the semiconductor device is water. Water has a very high dielectric constant, and has in pure state a high dielectric strength. Bernhoff et al. states that the water may be filled with nanoparticles to increase the dielectric constant and/or the dielectric strength. Also, in paragraph [0038], Bernhoff et al. discloses that particles having a tendency to absorb ions are added to address a risk of ionization of pure water. In the last two lines of paragraph [0038], Bernhoff et al. states that the pure water could also serve as resistive field grading due to its relatively high conductivity. Therefore, Bernhoff et al. does not disclose or suggest that nanoparticles could be used for field grading in a polymeric matrix.

The amount and size of particles in the filler included in the matrix according to claim 1 results in percolation at a lower filler concentration in the field grading material as compared to a corresponding material comprising filler consisting of particles of larger size. Bernhoff et al. does not disclose how to achieve percolation at a lower filler concentration of the field grading material in a polymeric matrix as described in paragraph [0037]. An advantage of the claimed

invention is that the lower the concentration of filler in the matrix, the better the mechanical properties of the field grading material. Bernhoff et al. does not disclose the composition or advantages of the claimed invention.

In view of the above, Bernhoff et al. does not disclose all elements of the invention recited in claims 1-28. Since Bernhoff et al. does not disclose all elements of the invention recited in claims 1-28, the invention recited in claims 1-28 is not properly rejected under 35 U.S.C. § 102(b). For an anticipation rejection under 35 U.S.C. § 102(b) no difference may exist between the claimed invention and the reference disclosure. *See Scripps Clinic and Research Foundation v. Genentech, Inc.*, 18 U.S.P.Q. 841 (C.A.F.C. 1984).

Along these lines, anticipation requires the disclosure, in a cited reference, of each and every recitation, as set forth in the claims. *See Hodosh v. Block Drug Co.*, 229 U.S.P.Q. 182 (Fed. Cir. 1986); *Titanium Metals Corp. v. Banner*, 227 U.S.P.Q. 773 (Fed. Cir. 1985); *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 1 U.S.P.Q.2d 1081 (Fed. Cir. 1986); and *Akzo N.V. v. U.S. International Trade Commissioner*, 1 U.S.P.Q.2d 1081 (Fed. Cir. 1986).

In view of the above, the reference relied upon in the office action does not disclose patentable features of the claimed invention. Therefore, the reference relied upon in the office action does not anticipate the claimed invention. Accordingly, Applicants submit that the claimed invention is patentable over the cited reference and respectfully request withdrawal of the rejection based on the cited reference.

If an interview would advance the prosecution of this application, Applicants respectfully urge the Examiner to contact the undersigned at the telephone number listed below.

The undersigned authorizes the Commissioner to charge fee insufficiency and credit overpayment associated with this communication to Deposit Account No. 22-0261.

Respectfully submitted,

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